ICD-10 C19, C20: Rectal cancer

Survival

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Creation date: 08/22/2018
Export date: 08/09/2018
Population: 4.81 m

Munich Cancer Registry
Cancer Registry Bavaria - Upper Bavaria Regional Center at Klinikum Grosshadern/IBE
Marchioninistr. 15
Munich, 81377
Germany

https://www.tumorregister-muenchen.de/en

## Index of figures and tables

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Figure 1a. Relative survival of patients with rectal cancer by period of diagnosis. Included in the evaluation are 17,402 cases diagnosed between 1988 and 2016.

The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 2000 to 2014, and are represented by colored diamonds in order to facilitate comparisons between MCR and SEER.

The presented survival curves are derived from clinical records with valid follow-up informations, which means that death certificate cases (DCO) cases are omitted from the analysis. With this one restriction, the MCR has provided population-based statistics since 1998, collecting data on all cancer cases in the region of southern Bavaria. Historical data of previous time periods can be heavily selected, therefore, univariate survival comparisons of the presented time periods must be carefully considered. Nonetheless, all calculable survival curves are depicted to facilitate the comparison of long time follow-up analyses of relative survival between particular cancers.

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Table 1b. Observed (obs.) and relative (rel.) survival of patients with rectal cancer by period of diagnosis for period 1988-2016 (N=17,402).
Figure 2a. Survival of patients with rectal cancer by sex. Included in the evaluation are 13,888 cases diagnosed between 1998 and 2016.

Table 2b. Observed (obs.) and relative (rel.) survival of patients with rectal cancer by sex for period 1998-2016 (N=13,888).
Figure 3a. Observed survival of patients with rectal cancer by age category. Included in the evaluation are 17,402 cases diagnosed between 1988 and 2016.

Figure 3b. Relative survival of patients with rectal cancer by age category. Included in the evaluation are 17,402 cases diagnosed between 1988 and 2016.
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**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with rectal cancer by age category for period 1988-2016 (N=17,402).
Figure 4a. Relative survival of patients with rectal cancer by UICC. For 16,515 of 17,402 cases diagnosed between 1988 and 2016 valid data could be obtained for this item. For a total of 16,401 cases an evaluable classification was established. The grey line represents the subgroup of 1,001 patients with missing values regarding UICC (5.8% of 17,402 patients, the percent values of all other categories are related to n=16,401).

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Table 4b. Observed (obs.) and relative (rel.) survival of patients with rectal cancer by UICC for period 1988-2016 (N=16,401).
Figure 4c. Relative survival of patients with rectal cancer by UICC. For 13,155 of 13,888 cases diagnosed between 1998 and 2016 valid data could be obtained for this item. For a total of 13,065 cases an evaluable classification was established. The grey line represents the subgroup of 823 patients with missing values regarding UICC (5.9 % of 13,888 patients, the percent values of all other categories are related to n=13,065).

Table 4d. Observed (obs.) and relative (rel.) survival of patients with rectal cancer by UICC for period 1998-2016 (N=13,065).
Figure 4e. Conditional relative 5-year survival of patients with rectal cancer by UICC. For 16,515 of 17,402 cases diagnosed between 1988 and 2016 valid data could be obtained for this item. For a total of 16,401 cases an evaluable classification was established. The grey line represents the subgroup of 1,001 patients with missing values regarding UICC (5.8 % of 17,402 patients, the percent values of all other categories are related to n=16,401).

Table 4f. Conditional relative 5-year survival of patients with rectal cancer by UICC for period 1988-2016 (N=16,401).

Conditional relative survival rates refer to the relative survival probability, in this case for 5 years after cancer diagnosis, compared to the age- and sex-matched population (=100 %) under the condition of being alive for a certain time period (x-axis in Figure 4c). The results illustrate to what extent the cancer induced mortality of particular subgroups declines in the subsequent years after detection of the malignancy. For instance, according to the presented survival statistics, patients in the subgroup UICC="I", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 93.1% (n=3,067).
Figure 4g. Relative survival of patients with rectal cancer by TNM staging. For 16,515 of 17,402 cases diagnosed between 1988 and 2016 valid data could be obtained for this item. For a total of 14,495 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 2,907 patients with missing values regarding TNM staging (16.7 % of 17,402 patients, the percent values of all other categories are related to n=14,495).
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**Table 4h.** Observed (obs.) and relative (rel.) survival of patients with rectal cancer by TNM staging for period 1988-2016 (N=14,495).
Figure 4i. Relative survival of patients with rectal cancer by TNM staging. For 13,155 of 13,888 cases diagnosed between 1998 and 2016 valid data could be obtained for this item. For a total of 11,467 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 2,421 patients with missing values regarding TNM staging (17.4 % of 13,888 patients, the percent values of all other categories are related to n=11,467).

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<td>obs. % rel. %</td>
<td>obs. % rel. %</td>
<td>obs. % rel. %</td>
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### Table 4j. Observed (obs.) and relative (rel.) survival of patients with rectal cancer by TNM staging for period 1998-2016 (N=11,467).

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</table>
Figure 5a. Time to first progression of 11,243 patients with rectal cancer diagnosed between 1998 and 2016 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.
<table>
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Table 5b. Time to first progression of patients with rectal cancer for period 1998-2016 (N=11,243).
Figure 5c. Observed post-progression survival of 4,743 patients with rectal cancer diagnosed between 1998 and 2016. These 4,743 patients with documented progression events during their course of disease represent 34.2% of the totally 13,853 evaluated cases (incl. M1, n=2,610, 18.8%). Patients with cancer relapse documented via death certificates only were excluded (n=1,292, 9.3%). Multiple progression types on different sites are included in the evaluation even when not occurring synchronously. The NOS (not otherwise specified) class is included under the condition, that it is the one and only progression type during the course of disease.

Medical record documentation often lacks the linguistic severity to distinguish between local relapse, regional lymph node metastasis and distant spread in solid cancers. Frequently, the statement “not specified” is the only information in registries regarding relapse of the disease. The category “Any type” denotes all cases who suffered from at least one relapse during the course of disease (incl. primary M1-status). Although, the real number of relapsed patients is likely to be much higher. The accumulated percentage of patients with local relapse or distant metastasis exceeds the 100% value because patients are potentially considered in more than one subgroup.

Table 5d. Observed post-progression survival of patients with rectal cancer for period 1998-2016 (N=4,743).
Figure 5e. Observed post-progression (distant metastasis) survival of 5,236 patients with rectal cancer diagnosed between 1988 and 2016 by period of progression.

Table 5f. Observed post-progression (distant metastasis) survival of patients with rectal cancer for period 1988-2016 by period of progression (N=5,236).
Shortcuts

MCR  Munich Cancer Registry, Germany
NCI  National Cancer Institute, USA
SEER  Surveillance, Epidemiology, and End Results, USA
UICC  Union for International Cancer Control, Geneva

DCO  Death certificate only  Death certificate provides the only notification to the registry.
NA  Not available
NOS  Not otherwise specified

OS  Overall/Observed survival  Overall/Observed survival (Kaplan-Meier estimate)
   Date of entry: diagnosis
   Event: death from any cause
RS  Relative survival  Survival compared to “general population”, ratio of observed to expected survival (Ederer II method), reflecting cancer specific survival
AS  Assembled survival  Assembled chart of observed, expected, relative survival
CS  Conditional survival  Survival probability under the condition of surviving a given period of time
TTP  Time to progression  Time to first progression / relapse
   Date of entry: diagnosis
   Event: (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression
1-KM  1 minus Kaplan-Meier estimator  (‘inverse’ Kaplan-Meier estimator)
CI  Cumulative incidence  Death as competing risk (according to Kalbfleisch und Prentice)
PPS  Post-progression survival  Survival since first progression / relapse (Kaplan-Meier estimate)
   Date of entry (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression
   Event: death from any cause

Recommended Citation


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